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that he was refused this small favour in a very churlish manner, by Mr. Dickinson, who declared that no *wise Patentee* would ever wish his invention to be described, or remarked on in print. How far his wisdom has been consulted in the late publication of his specification in the Repertory of Arts is not apparent; but it may be that on this occasion he was overruled by his partner, Mr. Trevelthick, the well known ingenuity of whose inventions on other occasions, makes it probable that he was the author of this plan for using iron casks: the merits of which, have we trust, been here discussed in the same just and impartial manner, that we have always followed: which so far from being any prejudice to Patentees, must in reality serve all those, whose intentions are honest and upright, both by the publicity it gives their inventions, and by leading to the detection of errors, the acting on which might be highly injurious, both to themselves and the public. As to Patentees who are less scrupulous about deception, and would wish to take advantage of the ignorant and unwary (though such occur much seldom than is suspected in general) it is not very necessary to be over delicate about their opinions; on the contrary we think it the duty of every honest man that can do so, to put the public on their guard as speedily as possible against their evil intentions.

The nature of the plan for which the patent here recited has been procured, being perfectly fair, honourable and beneficial to the publick (and if it was not so, we think Mr. Trevelthick would not permit his name to appear to it) it is hard to conceive the principle on which his partner should be so averse from having an account of it given in the periodical publications.

On Broom Flax, by Mr. James Hall of Walthamstow.

Phil. Mag. v.34, p.378.

To procure the flax of broom, it is only necessary to steep the twigs, or former year's branches (the most vigorous shoots of which are the best)

BELFAST MAG. NO. XVII.

for two or three weeks, more or less according to the heat of the weather, in stagnant water; or to boil them for about an hour in water. This done the flax comes freely from the twigs; and where there is not machinery for the purpose, may be easily peeled or stripped off by children or others, at any time when not quite dry, in the same way as hemp is peeled from the stalks. The twigs on being cleared from the flax, and steeped for some time in boiling water, become tough and beautifully white, and are worth about from a shilling to eighteen pence a pound, for making carpet brooms.

When stripped from the twigs the flax requires only to be well washed in cold water, then wrung and shaken well, and hung out to dry, previously to its being sent off to the paper manufacturers, or applied to other uses.

Mr. Hall recommends the cultivation of this plant very much to the poor of Ireland and Scotland, he has sent specimens of the broom flax to the Royal Society, to the Board of Agriculture, to the Society of Arts, to the British Museum, and to other places.

He observes that the idea of getting flax from broom is not new;—though as he mentions it as a discovery in part of his paper, it is probable he did not know this at first; he has made many experiments relative to this flax, which have confirmed his opinion of its utility.

Remarks.... The use of broom flax is very ancient in other countries, and has been long known in England; but notwithstanding this, Mr. Hall, is not without merit, for endeavouring to excite the attention of the public to what has fallen into undeserved oblivion. An extract made on this subject, more than twenty years ago (we believe from the Annual Register) is now in the hands of the writer, of which the following is a copy.

"The small twigs of Spanish broom give a material for making linen.

"For this purpose they must be gathered in bundles, laid in the sun to dry, then beat with a piece of L 11

wood, and left to steep in water about four hours; after which they are to be placed in a heap together in a hollow place, and covered with straw. They are to be left thus for eight or ten days: a little water is to be sprinkled over them every day, and after this the green rind comes off easily. They are then to be beaten with a mallet on a stone, and then untied and spread to dry, after which the material may be dressed in the same manner as flax.

"The green twigs of broom, are good food for sheep; and the flowers afford excellent nourishment for bees; sheep should not be let to feed on the broom, until it is three years old; and it should be pruned after the sheep have eaten off the twigs. It thrives best on a sandy or stony soil."

Some circumstances in the paper from the Philosophical Magazine, give reasons to suppose that the author of it is Sir James Hall.

Report on a method employed to destroy the smoke of a steam engine, at the Mint in Paris; by M. Guyton de Morveau, and M. de Prony. Annales de Chimie.

The boiler of this steam engine, is of a cylindrical shape, headed by a hemisphere. The plan of the fire place is of course a circle; and the grate is a square inscribed in the circle. The door by which fuel is introduced, at the extremity of one of the diameters of the fire place, answers to an opening placed at the other extremity of the same diameter, by which the flame escapes to circulate round the boiler, following a channel made in the brick work round the sides. This channel terminates, after an entire revolution, in a chimney communicating with the external air.

Two other channels made in the brick work, which are always open, are on the two sides of the door of the fire place, and make each of them half a revolution, in opposite directions, below the channel of circulation that envelopes the boiler, in order that they may open on the two sides of that opening of the fire place, by which the flame enters into

the channel that causes it to circulate round the boiler.

From this construction the two currents of air, introduced by the two channels just described, as soon as the door of the fire place is closed, unite into a single one, which rushes along with the flame into the channel of circulation. The vapourized part of the fuel, which is not yet consumed, and would produce the smoke, preserving by these means a temperature sufficiently high to separate the principles of the atmosphere and to unite with the oxygen, is burned before it arrives at the chimney, which only receives transparent gases. The caloric disengaged by the combustion of the smoke, contributes to the heating of the boiler.

These effects take place during the whole of the time, that the door of the fire place is shut, but as soon as it is opened, to introduce fresh fuel under the boiler, the combustion of the smoke immediately ceases. But it will be very easy to avoid this inconvenience in future by constructing the furnaces after the manner of those called athanors, in which the fuel is introduced and renewed by means of a slow harry, so that the fire place is constantly closed.

After this account of the furnace which consumes its smoke, Messrs. Morveau and Prony trace back the first invention on the subject to M. Dalesme (the author of many ingenious discoveries described in the volumes of the Academy of Sciences) who before the year 1669, made a fire place that burned its smoke, by constructing it in the shorter leg of a reversed syphen, which caused the flame to be drawn downwards through the grate and burning fuel. Delahire also made some experiments on the subject, and inserted a note on the process of Dalesme in the volume of the academy for the above-mentioned year. Both their methods are described in Boerhaave's chemistry, and were usefully employed in the 17th century, in several manufactories.

The authors then recount the theory of combustion, on which the following chief conditions for consuming smoke principally depend.